

D. Stringent Financial Qualifications Are Necessary

Commenting parties have similarly expressed general support for the proposed financial qualification requirements. Again, however, TRW and Ellipsat suggest certain relaxations of the proposed requirements, which would have the effect of compromising the realization of the benefits of global MSS Big LEO systems.

Both Ellipsat and TRW request that applicants should be required to submit evidence of financing for only a portion of their proposed systems. Ellipsat maintains that its system can provide "regional" commercial service with only eight of its 24 satellites and prefers any of three alternative options as a financial qualification requirement: a showing of financing under the Domsat standard for a portion of the system required to produce commercial service; a "showing of financial preparedness, including reliance on projected revenues, and future public offerings, in conjunction with defined progress milestones"; and/or "strict milestone schedules which require commercial service to be initiated within four years." Ellipsat Comments at 40. TRW similarly requests a financial qualification requirement limited to the part of each proposed system needed to provide commercial service over the United States. See TRW Comments at 43-44.

Allowing applicants to show financial wherewithal for only part of their proposed systems would be inconsistent with the Commission's global service requirement. Under this relaxed standard, applicants would be allowed to qualify, obtain licenses

and start building their satellites without any guarantee that they can finance the construction of a system capable of providing the global service required by the Commission. If the licensee ultimately is unable to finance a global system, reallocation of the spectrum to MSS systems capable of fully utilizing it will have to await the licensee's failure to meet its milestones or global service requirements and the subsequent declaration by the Commission that its license is null and void. At that point, however, valuable time will have been wasted, uncertainty created, and the full realization of the unique benefits of global MSS will have been derailed. For these same reasons, reliance solely on the licensees' milestones, as advocated by TRW and Ellipsat, is insufficient to justify a lax financial qualification standard. The Communications Act requires the Commission to judge each applicant's financial qualifications before issuing a license (47 U.S.C.A. § 308) and the proposed threshold financial qualification standards should eliminate inadequately financed applicants.^{12/}

Ellipsat and TRW also maintain that a partial-financing test would allow applicants to rely on prospective revenues to finance their systems and bring them to completion. See TRW Comments at 42; Ellipsat Comments at 40. However, the Domsat standard proposed by the Commission does, in fact, accommodate

^{12/} The analogy from the financial standard established by the Commission in the Little LEO Report and Order is inappropriate. In that context, a showing of adequate financing for part of the system could suffice because the Little LEO applicants did not have to satisfy a global service requirement. Little LEO systems also require far less capital than Big LEO MSS systems and can begin commercial service with fewer satellites.

reliance on projected revenues. Several project financing techniques allow the financial community to rely on projected revenues in order to make available adequate financing for the satisfaction of the proposed Commission standard. A "showing of financial preparedness" advocated by Ellipsat that is not sufficient to convince the capital markets should not be sufficient to provide a credible financial qualification standard for the Commission's licensing requirements.

Going to the other extreme, Ellipsat and AMSC ask the Commission to require a showing of assets irrevocably committed to an MSS system, in the name of an "equitable application" of the Domsat standard. As Motorola, TRW and others explain in their initial comments, however, the Domsat standard clearly does not require such an irrevocable commitment. The Commission expressly concluded that such a requirement was not necessary. See In Re Licensing Space Stations in the Domestic Fixed-Satellite Service, 58 Rad. Reg. 2d (P&F) 1267, 1272 (1985) ("1985 Domsat Order"). The setting aside, or freezing, of assets for the purpose of meeting the financial qualification standard would mean that substantial funds would have to be diverted from productive uses during the time between the start of the licensing process and the completion of construction of an MSS system. Since new entrants arranging debt or equity financing would not be required to incur such a penalty, there is no justification for penalizing large, well-financed companies in this manner.

II. THE FCC'S BAND SHARING PLAN

- A. The Commission Should Adopt its Proposed Plan with Only One Modification to Allow the Equitable Assignment of Spectrum in the Event of Only Two Operational MSS Systems

Virtually all the commenting parties agree with the general framework of the Commission's band sharing plan, demonstrating that the proposed plan strikes an appropriate balance of interests and makes the "workable adjustments" necessary to avoid mutual exclusivity. TRW states that it "can accept the broad framework of the sharing proposal that the Commission has advanced in the NPRM," and "believes that the Commission has endeavored mightily and with great insight and restraint to arrive at a solution that would enable all qualified applicants to establish MSS above 1 GHz systems." TRW Comments at 55. Ellipsat "generally endorses the sharing plan and commends the Commission for identifying an equitable solution." Ellipsat Comments at 13. Constellation "believes that the Commission's L-Band sharing proposal is a suitable framework for resolving mutual exclusivity." Constellation Comments at 21. LQP "can support the basic outline of the Commission's proposal for MSS spectrum sharing as a reasonable accommodation of competing MSS interests." LQP Comments at 29-30.

Having registered their general support for the Commission's spectrum proposal, however, certain parties level unjustified and untenable criticisms at certain aspects of the plan. These criticisms should not cause the Commission to deviate from its proposal.

1. The Sharing Plan Affords Motorola No Preferential Treatment Whatsoever

A minority of the MSS applicants -- TRW and Constellation -- allege that the assignment to Motorola of the "plum" and "untainted" upper 5.15 MHz of the 1610-1626.5 MHz band for the IRIDIUM® system amounts to preferential treatment of Motorola -- "the spectrum equivalent of a penthouse suite on 'Boardwalk'" as opposed to "cold-water flats on 'Baltic Avenue'" for the other applicants. TRW Comments at 62.

Motorola wishes to dispel once and for all such rhetoric as inaccurate and unjust. The 1621.35-1626.5 MHz assignment to the IRIDIUM® system must be placed in the context of the entire band plan, which assigns to the Big LEO MSS applicants 16.5 MHz of L-band and 16.5 MHz of S-band spectrum. Under the Commission's plan, up to four CDMA systems would be allowed to share 22.7 MHz of user link spectrum (11.35 MHz times two). All of the CDMA applicants now request assignment of the entire 2483.5-2500 MHz band for their downlinks. This would result in only a 5.15 MHz bi-directional assignment to Motorola's FDMA/TDMA system and almost 28 MHz of user link spectrum for up to four CDMA systems. Thus, the proportionate assignment to each CDMA applicant under the Commission's proposal could be almost 7 MHz, assuming that all four CDMA systems become operational. Assuming two operational CDMA systems, the proportionate assignment to each CDMA system would grow to about 14 MHz of user link spectrum, or almost three times as much as Motorola's proposed assignment. And finally, if only one CDMA system were

to become operational, under the Commission's plan that system would be assigned at least 16.5 MHz of user link spectrum whereas Motorola would be assigned at most 8.25 MHz, and possibly as little as 5.15 MHz. Clearly, the Commission's band plan does not favor Motorola or afford it any preferential treatment.

The reason why Motorola can afford to accept a lesser aggregate amount of spectrum than any other applicant, and thereby free up more S-band spectrum for the CDMA applicants, is the efficient bi-directional design of the IRIDIUM® system, which allows use of the same spectrum for both its downlinks and uplinks. However, the essential quid pro quo for leaving the entire downlink band clear for CDMA applicants to share on a full-band basis and thereby increase their overall system capacities^{13/} is (1) that the IRIDIUM® system must be allowed to operate in the upper portion of the 1610-1626.5 MHz band which is allocated to MSS downlinks; and (2) that the IRIDIUM® system cannot share the same frequencies with another MSS system. Accordingly, the assignment of the upper portion of the 1610-1626.5 MHz band does not afford a preference to Motorola, and is, in fact, advantageous to the CDMA applicants in that it affords each of them access to much more spectrum than proposed to be assigned to Motorola.

In any case, the CDMA applicants' claims about the superiority of the FDMA/TDMA assignment relative to other

^{13/} The CDMA applicants argue that access to this additional S-band spectrum is important for increasing the capacity of their systems, especially because of the capacity constraints that the PFD limits impose on the S-band. See LQP Comments at 33; TRW Comments at 82; Ellipsat Comments at 26-27.

portions of the 1610-1626.5 MHz band are grossly exaggerated. With respect to sharing with the Radio Astronomy Service ("RAS"), the constraints imposed on systems operating in the CDMA band segment under § 25.213(a)(1) are only slightly more stringent than those applicable to the FDMA/TDMA assignment. The map on the next page illustrates the circular areas around radio astronomy observatories in the continental United States, where CDMA operations would be constrained under the proposed rule. This map shows that these areas constitute a relatively negligible part of the U.S. and do not include any major metropolitan areas. With respect to GLONASS, the Technical Appendix attached hereto as Appendix 1 shows that upon the expected migration of GLONASS to antipodal operation below 1610 MHz, a well-designed CDMA system can occupy the lower portion of the 1610-1626.5 MHz band without any significant operational constraints. If the CDMA system complies with the out-of-band mask recommended by Motorola in its initial comments (which will apply to the CDMA and FDMA/TDMA systems alike), the entire CDMA band segment could be utilized by the CDMA systems.^{14/} Therefore, neither radio astronomy nor GLONASS would constitute a significant handicap or "taint" for the lower portion of the band.

^{14/} One other proviso is that the design of the GLONASS receivers must be improved by incorporating an appropriate band-pass front end filter and a narrowband IF filter. See infra.

2. The Commission Can Treat All Portions of the
MSS Spectrum as Equivalent

Constellation and TRW further argue that "[t]he Commission can not consider frequencies in the different parts of the band to be functionally equivalent or fungible for frequency assignment purposes." Constellation Comments at 22; TRW Comments id. In so doing, they ignore not only the fact that Motorola would be assigned less than one-fifth -- indeed, less than one-sixth -- of the available spectrum, but also that the Commission can treat all portions of this spectrum as equivalent for purposes of making assignments.

In connection with the Direct Broadcast Satellite ("DBS") service, for example, the Commission has determined that all orbital locations and channels would be considered of "equal value," "interchangeable," and "equivalent," and no right of comparative hearing will arise from award of a different slot or channel than the one requested, "[d]espite the physical differences in the orbital positions, such as eclipse protection and the elevation of satellites above the horizon." Tempo Satellite, Inc., 7 FCC Rcd. 6597, 6598 (1992); In re Continental Satellite Corp., et al., 4 FCC Rcd. 6292, 6294 (1989); In re Advanced Communications Corp. and Hughes Communications Galaxy, Inc., 6 FCC Rcd. 6977, 6979 (1991); Processing Procedures Regarding The Direct Broadcast Satellite Service, 95 F.C.C.2d 250, 253 (1983); In re Direct Broadcast Satellites, 90 F.C.C.2d 676, 719 (1982); National Ass'n Broadcasters v. FCC, vacated in part on other grounds and affirmed in part, 740 F2d 1197

(D.D.Cir. 1984). See also 47 C.F.R. § 100.13(b). This same policy applies for the assignment of orbital locations to fixed satellite systems. Western Union Telegraph Co., 46 F.C.C.2d 162, 165 (1974); RCA Global Communications, Inc., 56 F.C.C.2d 1066, 1071 (1975).

Constellation erroneously argues that the assignment of spectrum in the upper portion of the L-band to the FDMA/TDMA applicant amounts to denial of Constellation's application for spectrum in the 1624.5-1626.5 MHz band.^{15/} The Commission can assign to Constellation and the other CDMA applicants spectrum in the proposed CDMA allocation without a comparative hearing, on the basis of the reasonable presumption that all portions of the band are equal and the determination that use of the upper portion of the L-band by a TDMA/FDMA system allows the most intense utilization of the entire MSS spectrum.^{16/}

^{15/} Constellation's argument is also erroneous because a rulemaking that establishes the ground rules of sharing and gives Constellation a chance to modify its application by making "workable adjustments" to meet these ground rules does not implicate the comparative hearing requirement of Ashbacker Radio Corp. v. FCC, 326 U.S. 327 (1945). See Motorola's initial Comments at 38-40.

^{16/} In any event, Constellation's application for an exclusive FDMA uplink band at 1624.5-1626.5 MHz appears to have been superseded by its current plans, which include CDMA uplinks on a shared basis.

3. An FDMA/TDMA Assignment at the Bottom End of the MSS Band is Unworkable and Unreasonable

The Commission should also dismiss the uninformed recommendation of Mobile Datacom Corporation ("MDC") that the Commission split the FDMA/TDMA assignment into two parts, one at the top end and one at the bottom end of the 1.6 MHz band. MDC claims to make this recommendation "as a user of CDMA technology" in the 1610-1626.5 MHz band and in the name of providing "crucial certainty to CDMA licensees." MDC Comments at 3. In fact, however, MDC is neither authorized to use the band on a permanent basis nor qualified to opine on the assignment of spectrum necessary to provide certainty to any Big LEO MSS applicant.

MDC does not hold permanent authority to use the bands under consideration in this proceeding, and cannot receive such authority, as it failed to file an application for use of these bands within the filing window prescribed by the Commission. MDC's interim authority to use the bands will terminate when a regularly licensed MSS system launches its first satellite, unless MDC demonstrates conclusively that its operations will not interfere with any MSS operation in the band. MDC's recommendations mark the latest in a series of attempts to circumvent the limitations to its current interim authorization.

MDC's recommendations at this late date also reflect its lack of participation in this proceeding. Had MDC actively participated in the negotiated rulemaking phase of this proceeding it would have become aware of the problems with its proposed

plan.^{17/} Of particular note is MDC's total disregard for the fact that the lower portion of the L-band, which it would assign to Motorola, is not allocated for MSS downlinks, and therefore no bi-directional FDMA/TDMA operations could be authorized in that portion of the band. MDC's lack of familiarity with the sharing issues also is evidenced from its failure to address how the IRIDIUM® system would share the same spectrum assigned to the Radio Astronomy Service. Both of these deficiencies are fatal to MDC's proposed plan.

4. The Commission Does Not Need to Obtain Agreement from All of the Applicants in Order to Resolve the Question of Mutual Exclusivity

Constellation makes the unprecedented argument that the Commission's band sharing plan "does not resolve the question of mutual exclusivity unless all five applicants agree to it and amend their applications to conform to any such agreement." Constellation Comments at ii, 21. Not surprisingly, Constellation offers no legal support for this proposition. The Commission's statutory mandate of endeavoring to avoid situations of mutual exclusivity does not depend, and has never depended, upon obtaining agreement from all of the applicants.

While it is true that a consensus agreement of the applicants was the goal of the negotiated rulemaking conducted by the Commission, the Negotiated Rulemaking Committee ("NRC")

^{17/} Having failed to participate in the negotiated rulemaking, where the entire range of sharing issues were aired, MDC is also unqualified to offer any reasoned recommendation with respect to the LEO eligibility requirements proposed by the Commission.

failed to resolve fully all of the spectrum sharing issues. It is now up to the Commission to use its other administrative tools -- such as qualification requirements, band sharing plans, etc. -- to make the "workable adjustments" referenced in Ashbacker that are necessary to avoid mutual exclusivity. Indeed, the 1993 Budget Act reaffirms the Commission's "obligation in the public interest to continue to use engineering solutions, negotiation, threshold qualifications, service regulations, and other means in order to avoid mutual exclusivity in application and licensing proceedings." 47 U.S.C.A. § 309(j)(6)(E).

While the Commission has a "longstanding, deliberate and well-known" policy of avoiding comparative hearings for the award of satellite licenses,^{18/} it has never instituted a requirement of obtaining the applicants' agreement to the eligibility thresholds and the sharing plans it must promulgate as an alternative to comparative hearings. Such a requirement could automatically render any endeavor to avoid mutual exclusivity futile, since any applicant whose current application fails to meet an eligibility threshold would naturally be disinclined to agree to such a threshold.

In any case, in its joint proposal with TRW and Ellipsat, Constellation has agreed to a sharing plan that contemplates a less generous immediate assignment of spectrum to the

^{18/} Amendment of Parts 2, 22 and 25 of the Commission's Rules to Allocate Spectrum For and to Establish Other Rules and Policies Pertaining to the Use of Radio Frequencies in a Land Mobile Satellite Service for the Provision of Various Common Carrier Services, GEN Docket No. 84-1234, 7 FCC Rcd. 266, 268 ¶ 10 (1992) aff'd on other grounds, Aeronautical Radio, Inc. v. FCC 983 F.2d 275 (D.C. Cir. 1993).

CDMA systems than the assignments contained in the Commission's proposed plan. See Motorola Comments at 38. Nothing is mentioned in the Constellation/TRW/Ellipsat proposal about the novel notion of assigning to each applicant an equal amount of spectrum in the upper and lower portions of the band, which Constellation's comments belatedly advance. See Constellation/TRW/Ellipsat Joint Proposal at 10. Indeed, as TRW correctly observes, "the sharing proposal advanced in the NPRM appears to be based loosely on the approach taken by TRW, Constellation and Ellipsat in their Sharing Plan," rather than on the proposal of LQP and Motorola. TRW Comments at 55. Constellation also expresses its agreement with the Commission's plan as a "suitable framework for resolving mutual exclusivity." Constellation Comments at 21. Constellation now apparently seeks to parlay its purported and unfounded reservations into a negotiating chip that would allow it to obtain even more generous concessions than it had itself originally proposed. The Commission should not allow Constellation to hold this administrative rulemaking hostage to its desires.

Nor should the Commission take seriously the request of Constellation for a comparative hearing. Elsewhere in its comments, Constellation states that "[t]he Commission has wisely avoided the use of comparative hearings in the satellite services in the past, instead finding administrative means to grant licenses to all qualified applicants," and "agrees with the Commission's tentative decision that a comparative hearing is not an acceptable means for resolving any mutual exclusivity that

may exist among the pending LEO applications." Constellation Comments at 33 (footnote omitted).

5. Motorola Cannot Share its FDMA/TDMA Assignment with Any Other MSS System

The Commission should explicitly state that CDMA applicants cannot convert their transmission schemes to the FDMA/TDMA modulation "in order to have an opportunity to move up into the better end of the frequency band," as suggested by TRW. TRW Comments at 71 (footnote omitted). This recommendation is again predicated on the superiority of the FDMA/TDMA spectrum assignment, which, as demonstrated above, is a myth when viewed in the context of the overall spectrum assignments. TRW's recommendation, if taken at face value, demonstrates a lack of seriousness as well as the embryonic state of its system design. At worst, it signals the potential for "strike" applications or amendments designed to thwart competition rather than for legitimate purposes.

As the Commission clearly contemplates in the NPRM, the FDMA/TDMA assignment must be reserved for only one FDMA/TDMA applicant. See NPRM ¶ 31. This is in recognition of the IRIDIUM® system's inability to share on a co-frequency co-coverage basis with any other system, and the other applicants' expressed intent to develop CDMA systems on a band sharing basis. Nevertheless, TRW's comments establish the need for the Commission to reconfirm that its sharing plan contemplates only one system -- Motorola's IRIDIUM® system -- for the FDMA/TDMA assignment.

B. In the Event of Only One CDMA and One FDMA/TDMA System, the 1610-1626.5 MHz Band Should Be Divided Equally Between the Two Systems

The NPRM proposes that, in the event of one CDMA and one FDMA/TDMA system becoming operational, each would be assigned 8.25 MHz of the 1610-1626.5 MHz band, provided that the FDMA/TDMA applicant can "demonstrate" that it needs the 3.1 MHz increment above the original assignment. In its initial Comments, Motorola argued that if only two systems become operational, each should be entitled to one-half of the available L-band spectrum.

Motorola is all the more convinced of its position in light of LQP's request that CDMA systems should be entitled to exclusive use of 11.35 MHz in the L-band even if only one such system ever becomes operational. Anything short of an unconditional 8.25 MHz assignment to the FDMA/TDMA licensee in such a circumstance would create a competitive imbalance that would be hard to overcome. In determining the fate of this 3.1 MHz increment, the Commission should consider several factors.

First, the scenario of one FDMA/TDMA system and one CDMA system is not a remote eventuality; realistically, it may well be the most likely scenario, especially since, a full three years after the applications were filed, only one FDMA/TDMA and one CDMA system have provided any tangible evidence of progress in securing significant financing for their systems. Accordingly, apportioning the 1610-1626.5 MHz band equally if only two systems become operational is an important issue and one about which the Commission should not leave any uncertainty.

Second, the proposed requirement of a "need" showing could hinder competition between the two MSS licensees by severely handicapping the FDMA/TDMA system. Of the two operational MSS systems, the CDMA system would be assigned 8.25 MHz for its uplinks and an additional amount of spectrum (possibly the entire 16.5 MHz) in the 2483.5-2500 MHz for its downlinks. By contrast, under the Commission's plan the FDMA/TDMA system could still be assigned a total of only 5.15 MHz for its bi-directional operations. By leaving open the possibility that one of the two competitors could have access to three to four times more spectrum than the other, the Commission would be handicapping unjustifiably one technology in the MSS marketplace.

Third, creation of this uneven playing field would be gratuitous, as there is no reason for the imposition of any "need" requirement on the FDMA/TDMA licensee. New entrants can be accommodated in other spectrum.^{19/} Indeed, squeezing new entrants in 3.1 MHz between two mature MSS systems would be unwise. Thus, discriminatory treatment of one of the two MSS licensees cannot be justified in the name of new entry, since it

^{19/} Because Motorola's current system design permits it to operate over the 1616-1626.5 MHz Band, it would be easy and inexpensive for Motorola to expand from an initial assignment of 5.15 MHz into the 1618.25-1621.35 MHz. By contrast, if Motorola had to use an additional 3.1 MHz anywhere outside the 1616-1626.5 MHz band, this would require much more significant changes to the system design (especially since the new bandwidth might not be allocated for bi-directional use). It makes much more sense for new entrants to be accommodated in new MSS spectrum and assign the 3.1 MHz for expansion of the IRIDIUM® system.

might well prove detrimental to those whom it was intended to accommodate.

Fourth, Westinghouse Electric Corporation ("Westinghouse"), the prime contractor for the ground segment of one of the CDMA systems (Ellipsat), agrees with Motorola's position. In its Comments, Westinghouse states that "if only one CDMA applicant is licensed, then the available band should be evenly split between the CDMA and TDMA applicants." Westinghouse Comments at 7.

LQP's proposal, if adopted by the Commission, would substantially exacerbate the imbalance of spectrum assignments. LQP refers to the assignment of 8.25 MHz of L-band spectrum to each system as the "50/50 proposal." This, however, is a misnomer. If both the L- and S-bands are taken into account, the assignment of 8.25 MHz to the FDMA/TDMA system should be more appropriately termed the "75/25 proposal," while LQP's suggested band plan is plainly the "85/15 proposal."

LQP asserts that under the 75/25 proposal, the single CDMA system would find itself "forcibly and substantially altered" because it would have to operate in less spectrum than originally planned. Yet LQP does not explain what alterations would be needed to its system if it had to adjust bandwidth, and why such a change would be substantial. Indeed, LQP would only need to stop transmitting in its top channels in order to cut back on assigned spectrum.

Opposing the additional assignment of the 3.1 MHz to the FDMA/TDMA system, LQP further argues that the Commission "has

already found that Motorola can 'successfully operate in 5.25 MHz of bandwidth' and that 'as little as 3.3 MHz may be sufficient to accommodate Motorola.'" LQP Comments at 39 (footnote and citation omitted). The Commission has not made any such "finding," but has merely included these dicta in the discussion of its proposed rules. As Motorola has explained in its initial Comments, these statements are not accurate. While Motorola can initially operate with approximately 5 MHz of bandwidth, doing so will compromise its ability to implement its business plan, particularly if coupled with a much more generous assignment of spectrum to its CDMA competition. Operation in only 3.3 MHz of spectrum would be fatal to the viability of the IRIDIUM® system. It is ironic that LQP seeks to confine the spectrum assignment of Motorola on the basis of an inference that the Commission drew from the joint LQP/Motorola proposal and that if true would apply both to LQP's and Motorola's systems. LQP rejects the Commission's conclusion for its system and correctly points out that the joint proposal of the two parties cannot be a basis for an inference that each system can operate with only 3.3 MHz. LQP Comments at 37-38. Nevertheless, LQP invokes this inference as the basis for determining the spectrum needs of Motorola. The Commission's inference from the LQP/Motorola proposal is assertedly inaccurate for LQP, and by the same token it is certainly inaccurate for Motorola.

LQP also appears to argue that a hearing would be required for the reduction of the CDMA assignment from 11.35 to 8.25 MHz owing to the complexity of the issues presented. See

LQP Comments at 39-40, n.28. This contention is incorrect. Indeed, LQP recognizes that no hearing is required to implement the workable adjustments needed to achieve sharing among all of the proposed systems. The possibility of two operational systems presents, if anything, less complex issues than sharing among more than two systems, and all of those issues have been adequately aired and can be disposed of by the Commission on the basis of the vast record accumulated in this and related proceedings.^{20/}

C. The Commission Must Not Promulgate
an Interim Band Sharing Plan

The initial comments filed by many parties confirm the near-certainty that GLONASS will move out of the 1610-1626.5 MHz band on a timely basis, and further buttress the Commission's reasoned assumption to that effect. Such an undertaking will obviate any need for an interim band sharing plan.

The Federal Aviation Administration ("FAA"), for example, points out that "[t]he Russian Federation has indicated their willingness to shift GLONASS out of the 1610-1616 MHz band," and that the Russian Federation hopes to achieve complete antipodal operation by 1998. FAA Comments at 2. Aeronautical Radio, Inc. ("ARINC") also acknowledges that representatives of Russia have been "receptive" to making these changes. ARINC

^{20/} LQP does not appear to take issue with the Commission's caution that "we would consider cancelling a portion of the assignment if the licensee is not fully using the spectrum." NPRM ¶ 33 n.66. Indeed, LQP recommends an efficiency standard, presumably in aid of that determination.

Comments at 3. See also Comments of Rockwell International Corporation at 3. As LQP points out, more than being only "receptive," the Russian Federation has actually announced its plan to move GLONASS below 1610 MHz by 1998, in the context of coordination discussions with the U.S. State Department. See Technical Appendix to LQP Comments ¶ 2.2, at 11.

There also is ample evidence that the FAA's interest in using GLONASS for precision landings and approach communications is lukewarm at best. Even in its comments, the FAA fails to mention any concrete plans to use GLONASS. FAA officials have repeatedly confirmed the FAA's focus on GPS as the only satellite navigation system needed over U.S. air space. Indeed, FAA Administrator Hinson has unequivocally stated "'that GPS will be the only system we'll need to safely and efficiently manage our airspace. From the standpoint of economics and public policy, I believe it is the only system that makes sense.'" See CNS Outlook, Mar. 1994, at 5 (attached hereto as Appendix 2). See also Appendix 8 to Motorola's Comments. Consistent with this firm conviction of the FAA Administrator, on June 8, 1994 the FAA issued a Request for Proposal for the development of a Wide Area Augmentation System to enhance GPS. The Statement of Work accompanying the FAA's invitation states that the system must "provide data to users that augment . . . GPS so that positioning and navigation performance meets FAA navigation requirements for oceanic and domestic en route, terminal, nonprecision approach, and precision approach phases of flight." See U.S. Department of Transportation, Federal Aviation Administration, Request for

Proposal, June 8, 1988 (also attached hereto in Appendix 2). The Washington Post further reported the FAA Administrator's statement that the augmented GPS system would "pinpoint aircraft to within 250 feet and allow them to take off and land at any airport in the country in all but the most difficult weather." See "FAA Plans Satellite System to Reshape Aircraft Navigation," The Washington Post, June 9, 1994, at D9.

As LQP points out in its excellent discussion of GLONASS, "even if the international aviation community decides that the [Global Navigation Satellite System ("GNSS")] should include both GPS and GLONASS, all the GLONASS frequencies are not required to achieve the benefits of using both systems." LQP Comments at 72. A study conducted for LQP by Sat-Tech Systems, Inc. confirms that "the GNSS need not include frequencies above 1606 MHz to achieve its operational objectives and requirements." Id. at 73.

In light of these circumstances, the Commission is clearly justified in concluding that an interim MSS sharing plan is not necessary at this time. Notably, one of the leading proponents of CDMA satellite technology -- LQP -- agrees to the absence of an interim sharing plan from the Commission's proposal. See Technical Appendix to LQP Comments, ¶ 2.2.1, at 13. The other CDMA applicants' request for an interim plan can perhaps be attributed to a desire to profess partial dissatisfaction with a band sharing plan that they admit to be workable in order to obtain further concessions from the other parties or the Commission.

The FAA's request for an interim plan that would be effective until 1998, when the FAA expects GLONASS to migrate below 1610 MHz, reflects a misunderstanding of the timing of MSS operations. No MSS applicant can rationally be expected to receive a license, complete construction of its system and become operational prior to 1998. Devising an interim band plan for the period until 1998 would therefore be a waste of resources.

Nor should the Commission make GLONASS migration an express condition of each MSS license, as requested by Ellipsat. In the very unlikely event GLONASS does not move down in frequencies on a timely basis, the Commission may revisit its band sharing plan. Yet this does not mean that the Commission should expressly condition all of the MSS licenses on GLONASS migration. Imposing such a condition could be dangerous and counter-productive, as it might embolden other Administrations in negotiations with the U.S. during the international coordination process.

D. The Commission Should Not Adopt Special Rules for International Coordination of LEO MSS Systems

COMSAT maintains that the NPRM does not give "adequate consideration to the underlying international policy issues regarding global MSS spectrum requirements, coordination and licensing of international services." COMSAT Comments at 2. COMSAT urges the Commission to devise rules "which provide assurances that international cooperation and coordination on

policy, operational service and spectrum issues will be conducted to meet U.S. national and foreign policy objectives."^{21/} Id.

COMSAT confuses the purpose of the U.S. domestic licensing proceeding and the international coordination process. This rulemaking proceeding is not the forum for determining "how U.S. authorized MSS systems intended for global operations will be coordinated with other countries." Id. at 5. As COMSAT should know, international coordination in these bands is governed by the procedures of advance publication and coordination among Administrations set forth in the international Radio Regulations and interim coordination procedures (Article 11, Resolution 46). Under these procedures, coordination is triggered by the filing of a request from Administrations whose systems may be affected by the proposed MSS systems. These procedures are designed to allow potentially affected Administrations to exchange information necessary to effect coordination.

Any effort to prejudge international coordination of U.S. systems outside this procedure would be duplicative, uninformed and futile. The Commission cannot take it upon

^{21/} COMSAT's interest in international coordination mainly derives from the fact that INMARSAT has filed with the ITU/IFRB an advance publication for, among other bands, the 1.6 and 2.4 GHz bands at issue in this proceeding. See COMSAT Comments at 5-6. However, INMARSAT seems to have abandoned any plans to use those bands and has instead recently announced its intention to form an affiliate that would endeavor to operate an MSS system in the 2 GHz band. See, e.g., Petition of Motorola Satellite Communications, Inc. for Declaratory Ruling Concerning Participation by COMSAT Corporation in a New Inmarsat Satellite System Designed to Provide Service to Handheld Communications Devices, File No. ISP-94-001, Supplemental Filing of COMSAT Corporation at 14 (filed June 10, 1994).

itself to devise rules that would facilitate international coordination against phantom foreign systems. Accordingly, the Commission should do no more than acknowledge the potential need for international coordination and the applicability of the international Radio Regulations and Resolution 46, and require applicants, in accordance with existing rules, to supply the Commission with the information necessary for compliance with these international procedures. See NPRM ¶¶ 91-92, 47 C.F.R. § 25.111 (1993). Any additional requirements on the domestic MSS licensees in the name of international coordination would only serve to weaken the position of the U.S. MSS industry in the international coordination process.

Likewise, the existing rules make adequate provision for any consultations or coordination required by Article XIV of the INTELSAT Agreement and Article 8 of the INMARSAT Convention. The Commission's rules already instruct applicants and licensees to provide the Commission with the information necessary for the purpose of any such consultation and coordination.

E. The Commission Must Not Delay the Licensing of MSS Systems As Suggested By the European Community

Motorola became recently aware of a Note Verbale issued by the Delegation of the Commission of the European Communities on June 1, 1994 to the State Department with a request that it be transmitted to the Commission for inclusion in the docket of this proceeding. While Motorola does not object to the request of the European Communities ("EC") for bilateral consultation with the

U.S. Government on the issues of concern to the EC, the Commission must not delay the licensing of MSS systems until such consultations take place. As previously noted by Motorola and other commenting parties, there is an urgent need for global MSS in the United States and around the world. The public interest would not be served by delaying the implementation of U.S. licensed MSS systems until the EC is satisfied that all of its concerns have been met.

For the most part, the issues raised by the EC can be addressed during the international coordination process. For example, if any foreign licensed system desires to use the spectrum under consideration in this proceeding it can proceed through its Administration to coordinate the use of its system with the U.S. licensed systems. Indeed, several Administrations are currently participating in the international coordination process with the United States. Market access issues can also be dealt with on a bilateral basis outside the U.S. licensing process.^{22/}

F. Existing Commission and International Regulations Adequately Address MSS Downlink Issues

TRW vaguely requests that the Commission "include a section in the proposed rules which acknowledges the proposed use of the secondary downlink and the potential interference from these secondary MSS downlinks to primary MSS uplinks, and makes

^{22/} The EC's comments on U.S. foreign ownership restrictions would become moot if the Commission were to adopt the recommendation of all of the MSS applicants to treat them as non-common carriers.